METHODS FOR CONSISTENT FOREWARNING OF CRITICAL EVENTS ACROSSMULTIPLE DATA CHANNELS

Patent number: CA2491987

Publication date: 2004-01-22

Inventor: HIVELY LEE M (US)

Applicant: UT BATTELLE LLC (US)

Classification:
- international: *G06F19/00;* G06F19/00; (IPC1-7): G06F19/00
- european: G06F19/00A

Application number: CA20032491987 20030701

Priority number(s): US20020195626 20020712; WO2003US20700 20030701
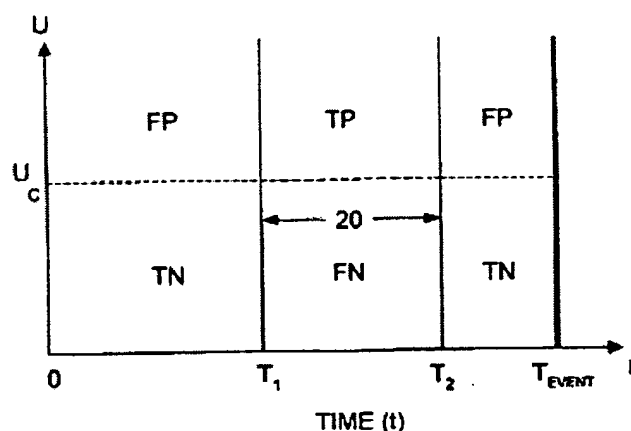
Also published as:

WO2004008373 (A3)
WO2004008373 (A2)
US2004087835 (A1)
MXPA05000564 (A)
CN1679042 (A)

more >>

Report a data error here

Abstract of CA2491987

This invention teaches further method improvements to forewarn of critical events via phase-space dissimilarity analysis of data from biomedical equipment, mechanical devices, and other physical processes. One improvement involves conversion of time-serial data into equiprobable symbols. A second improvement is a method to maximize the channel-consistent total-true rate o f forewarning from a plurality of data channels over multiple data sets from t he same patient or process. This total-true rate requires resolution of the forewarning indications into true positives (TP), true negatives (TN), false positives (FP) and false negatives (FN) relative to a forewarning window 20. A third improvement is the use of various objective functions, as derived from the phase-space dissimilarity measures, to give the best forewarning indication. A fourth improvement uses various search strategies over the phase~space analysis parameters to maximize said objective functions. A fift h improvement shows the usefulness of the method for various biomedical and machine applications.

TIME (t)